

CLAIMS

1. A green sheet coating material containing ceramic powder, a binder resin including a butyral based resin as the main component, and a solvent, wherein
5 said solvent contains a first solvent medium having a relatively low boiling point, wherein said binder resin is easy to be dissolved, and a second solvent medium having a relatively high boiling point.

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2. The green sheet coating material as set forth in claim 1, wherein said second solvent medium contains at least one selected from 1) monohydric alcohol having a carbon number of 5 to 9, 2) ketones containing a cyclic
15 structure and 3) compounds containing two or more functional groups selected from a -OH group, ether and ketone.

3. The green sheet coating material as set forth
20 in claim 1 or 2, wherein a vapor pressure of said second solvent medium at the room temperature is lower than that of said first solvent medium.

4. The green sheet coating material as set forth
25 in any one of claims 1 to 3, wherein a boiling point of

said second solvent medium is in a range of 130 to 230°C.

5. The green sheet coating material as set forth in any one of claims 1 to 4, wherein a vapor pressure of
5 said second solvent medium at 25°C is in a range of 1.3 to 667 Pa.

6. The green sheet coating material as set forth in any one of claims 1 to 5, wherein, when assuming that
10 a boiling point of said second solvent medium is T°C and a vapor pressure of said second solvent medium at 25°C is α Pa, a product of $T \times \alpha$ is in a range of 2000 to 65000 (°C \times Pa).

15 7. The green sheet coating material as set forth in any one of claims 1 to 6, wherein said second solvent medium has a higher boiling point by 50 to 105°C than a drying temperature at the time of making said green sheet coating material to be a sheet.

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8. The green sheet coating material as set forth in any one of claims 1 to 7, wherein said second solvent medium is included by 5 to 70 wt% with respect to 100 wt% of the entire solvent.

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9. The green sheet coating material as set forth in any one of claims 1 to 7, wherein said second solvent medium includes an organic solvent having a higher boiling point by 60 to 150°C than that of alcohol having the lowest boiling point included in said first solvent medium.

10. The green sheet coating material as set forth in any one of claims 1 to 9, wherein said second solvent medium includes an organic solvent having a vapor pressure at 25°C of 0.1 to 10% of that of alcohol having the highest vapor pressure at 25°C included in said first solvent medium.

11. The green sheet coating material as set forth in any one of claims 1 to 10, wherein said second solvent medium includes at least one selected from the 1) to 3) below.

1) monohydric alcohol having a carbon number of 5 to 9

1-pentanol, 1-hexanol, 1-heptanol, 1-octanol, 1-nonanol, tarpineol

2) ketones containing a cyclic structure
cyclohexanon, isophorone

3) compound containing two or more functional

groups selected from a -OH group, ether and ketone

2-ethoxyethanol, 2-butoxyethanol, diethylene glycol monomethyl ether, diethylene glycol monoethyl ether, diacetone alcohol

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12. The green sheet coating material as set forth in any one of claims 1 to 11, wherein said butyral based resin is a polybutyral resin; and

a polymerization degree of said polybutyral resin is 1000 or more and 1700 or less, a butyralation degree of the resin is 64% or higher and 78% or lower, and a residual acetyl group amount is less than 6%.

13. The green sheet coating material as set forth in any one of claims 1 to 12, wherein said binder resin is included by 5 parts by weight or more and 6.5 parts by weight or less with respect to 100 parts by weight of said ceramic powder.

14. A production method of a ceramic green sheet, comprising the steps of:

preparing a green sheet coating material as set forth in any one of claims 1 to 13; and

forming a ceramic green sheet by using said green sheet coating material.

15. The production method of a ceramic green sheet as set forth in claim 14, wherein a drying temperature at the time of forming a ceramic green sheet by using said green sheet coating material is 50 to 100°C.

16. A production method of a ceramic electronic device, comprising the steps of:

preparing a green sheet coating material as set forth in any one of claims 1 to 13;

forming a ceramic green sheet by using said green sheet coating material;

drying said green sheet;

stacking the green sheets after drying via an internal electrode layer to obtain a green chip; and firing said green chip.

17. The production method of a ceramic electronic device as set forth in claim 16, wherein a drying temperature at the time of drying said green sheet is 50 to 100°C.

18. A green sheet produced by using a green sheet coating material as set forth in any one of claims 1 to 13.